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ABSTRACT FORM FOR THE 1988 ANNUAL MEETING

Read carefully the abstract instructions (attached). Follow format for heading. Original must be on this form. Leave a double space between heading and abstract. Text of abstract must be single spaced. There will be a charge of \$25 for any abstract that must be retyped. Leave no margins—type must be within blue rectangle. Single space, except for double space between body of text and authors. Use type no smaller than 12-pitch. Proof carefully.

Deadline for receipt in Executive Secretary's office is October 16, 1987. Submit original and one copy only, together with your submission check fee of \$25 (no purchase orders accepted).

**PYRETHROID INSECTICIDES ALTER MEMBRANE
POTENTIAL IN FISH AND RAT BRAIN SYNAPTOSOMES.**
J T Eells and P A Bandettini. Medical College
of Wisconsin, Milwaukee, WI. Sponsor: M J
Vodicnik.

Pyrethroid insecticides modify the ionic permeability of nerve membranes producing distinctive poisoning syndromes in insects, fish and mammals. Fish are more sensitive than mammals to pyrethroids. The aim of this investigation was to compare the actions of the pyrethroid, deltamethrin (DM), on membrane potential in trout and rat brain synaptosomes. Accumulation of ³H-tetraphenylphosphonium (TPP) was used to estimate membrane potential. In trout synaptosomes, DM decreased TPP accumulation in contrast to its actions in rat synaptosomes where an increase in TPP accumulation was observed. These data indicate that DM depolarized fish synaptosomes and hyperpolarized rat synaptosomes. The hyperpolarizing effect of DM in rat synaptosomes was reversed by the addition of the sodium channel activator, veratridine (Vtd), resulting in a decrease in TPP accumulation greater than that observed with Vtd alone. Fish brain synaptosomes were more sensitive to the depolarizing actions of DM and aconitine than rat brain synaptosomes suggesting a species difference in sodium channel function. The mechanism of the unusual hyperpolarizing action of DM on rat synaptosomes is under investigation. (ES 01985, NSF-OCE 8713027)

1. Name and address of first (presenting) author:

Senior (first) authors can submit only one abstract for the meeting.

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Mary Jo Vodicnik

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| <u> </u> 4. Biotransformation/Disposition | <u> </u> 13. Hepatic/GI System | <u> </u> 22. Solvents |
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